DIESEL MANUAL TRANSMISSION
2008 BODY BUILDER GUIDE SUPPLEMENT

NPR-HD/W4500, NQR/W5500, NRR/W5500 HD

2008 DIESEL MANUAL TRANSMISSION – SUPPLEMENT

NPR-HD4500, NQR/W5500, NRR/W5500 HD

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DIESEL MANUAL TRANSMISSION SPECIFICATION SUPPLEMENT

MECHANICAL SPECIFICATIONS
Engine Horsepower and Torque Chart

The following table presents Net versus Gross Horsepower and Torque ratings for Isuzu/W-Series Truck Product Engines:

ENGINE 4HK1-TC	APPLICATION	TRANSMISSION	NET HP(1) HP/RPM	NET TORQUE(1) LBS-FT/RPM	GROSS HP(1) HP/RPM	GROSS TORQUE(1) LBS-FT/RPM
Isuzu	NPR HD/W4500 NQR/W5500 NRR/W5500 HD	Manual	169/2400	379/1850	175/2400	387/1850

MECHANICAL SPECIFICATIONS
GVW/GCWR Chart

The following table presents GCWR Ratings ratings for Isuzu/W-Series Truck Product:

TRUCK MODEL	TRANSMISSION	GVWR (lbs.)	GCWR (lbs.)(1)
NPR HD/W4500 DIESEL	MANUAL	14,500	20,500
NQR/W5500 DIESEL	MANUAL	17,950	23,950
NRR/W5500 HD DIESEL	MANUAL	19,500	25,500

[1] The NPR HD, NQR, NRR/W3500, W4500, W5500 HD are not approved for Hot Shot applications.

NPR-HD/W4500, NQR/W5500, NRR/W5500 HD
Diesel Manual Transmission Specification Supplement

MODEL	NPR-HD/W4500,NQR/W5500, NRR/W5500 HD
GVWR	14,500 lb 17,950 lb 19,500 lb
WB	109 in, 132.5 in, 150 in, 176 in
ENGINE Model/Displacement HP (Gross) Torque (Gross) Equipment	Isuzu 4-cylinder, in-line 4-cycle, turbocharged, intercooled, direct injection diesel. 4HK1-TC/317 CID (5.19 liters) 175 HP/2400 RPM 387 lb ft torque/1850 RPM Dry element air cleaner with vertical intake; 2 rows 569 square in. radiator; 7 blade 20.1in diameter fan with viscous drive. Cold weather starting device and an oil cooler. Engine oil level check switch and light. Engine warning system with audible warning for low oil pressure, high coolant temperature, and low coolant level. Engine cruise control and engine idle up function. Rear engine cover.
CLUTCH	Single, dry plate, 14 in. diameter, actuated by self-adjusting hydraulic master/slave cylinder.
TRANSMISSION	Isuzu MZZ, 6 speed all forward gears synchronized. Sixth gear is overdrive. PTO capability
ADDITIONAL SPECIFICATIONS	See appropriate model in 2008 model year Body Builders Guide

NPR-HD/W4500,NQR/W5500, NRR/W5500 HD
Diesel Manual Transmission Chassis Weight Supplement

NPR-HD/W4500

In-Frame Tank 14,500-lb. GVWR Manual Transmission Model
Chassis Curb and Maximum Payload Weights

Model	WB+	Unit	Front	Rear	Total	Payload
NE1	109 in.	lb.	3611	1974	5585	8915
NE2	132.5 in.	lb.	3712	1948	5660	8840
NE3	150 in.	lb.	3765	1932	5697	8803
NE4	176 in.	lb.	3834	1918	5752	8748

NQR/W5500

In-Frame Tank 17,950-lb. GVWR Manual Transmission Model
Chassis Curb and Maximum Payload Weights

Model	WB+	Unit	Front	Rear	Total	Payload
NQ1	109 in.	lb.	3843	2287	6130	11820
NQ2	132.5 in.	lb.	3970	2236	6206	11744
NQ3	150 in.	lb.	4036	2206	6242	11708
NQ4	176 in.	lb.	4121	2176	6297	11653

NRR/W5500-HD

In-Frame Tank 19,500-lb. GVWR Manual Transmission Model
Chassis Curb and Maximum Payload Weights

Model	WB+	Unit	Front	Rear	Total	Payload
NT1	109 in.	lb.	3904	2289	6193	13307
NT2	132.5 in.	lb.	4028	2240	6268	13232
NT3	150 in.	lb.	4093	2212	6305	13195
NT4	176 in.	lb.	4032	2382	6414	13086

NPR-HD/W4500

Side Mounted Tank 14,500-lb. GVWR Manual Transmission Model
Chassis Curb and Maximum Payload Weights

Model	WB+	Unit	Front	Rear	Total	Payload
NE1	109 in.	lb.	3889	1743	5632	8868
NE2	132.5 in.	lb.	3950	1758	5708	8792
NE3	150 in.	lb.	3990	1769	5759	8741
NE4	176 in.	lb.	4037	1783	5820	8680

NQR/W5500

Side Mounted Tank 17,950-lb. GVWR Manual Transmission Model
Chassis Curb and Maximum Payload Weights

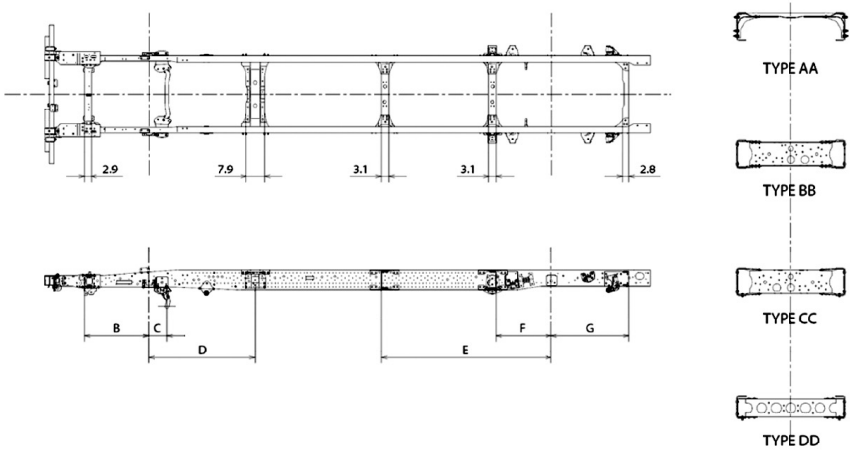
Model	WB+	Unit	Front	Rear	Total	Payload
NQ1	109 in.	lb.	4074	2004	6078	11872
NQ2	132.5 in.	lb.	4156	1998	6154	11796
NQ3	150 in.	lb.	4208	1997	6205	11745
NQ4	176 in.	lb.	4269	1997	6266	11684

NRR/W5500-HD

Side Mounted Tank 19,500-lb. GVWR Manual Transmission Model
Chassis Curb and Maximum Payload Weights

Model	WB+	Unit	Front	Rear	Total	Payload
NT1	109 in.	lb.	4138	2005	6143	13357
NT2	132.5 in.	lb.	4217	2002	6219	13281
NT3	150 in.	lb.	4266	2003	6269	13231
NT4	176 in.	lb.	4326	2005	6331	13169

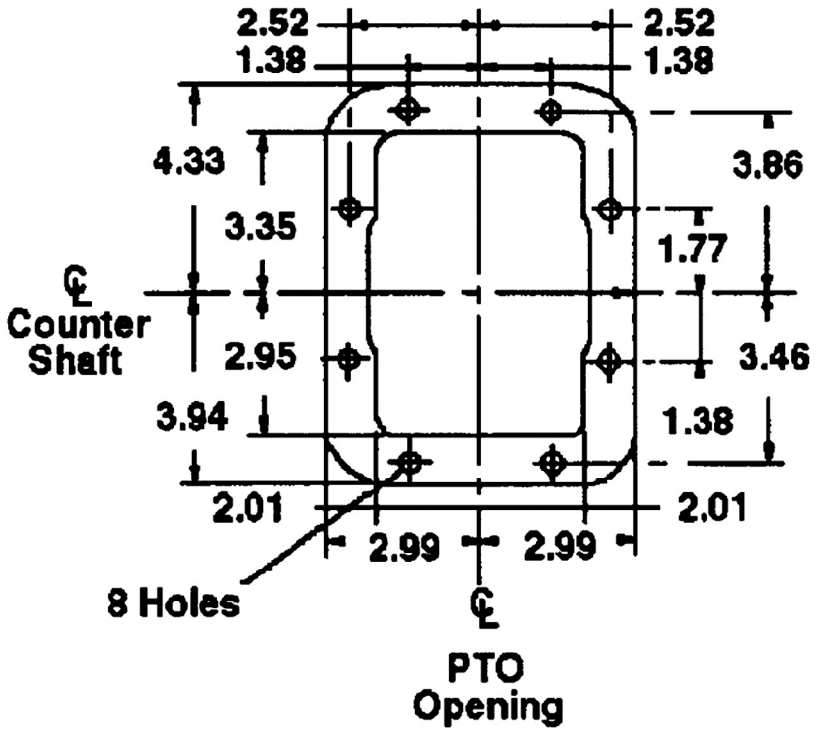
NPR-HD/W4500,NQR/W5500, NRR/W5500 HD
Diesel Manual Transmission Frame and Crossmember Specifications



Wheelbase	Frame	Crossmember Type/Location									
		B	C	D		E		F		G	
109	0.24	28.3	7.9	AA	46.5	–	–	CC	24.2	DD	33.8
132.5	0.24	28.3	7.9	AA	46.5	BB	57.5	CC	24.2	DD	33.8
150	0.24	28.3	7.9	AA	46.5	BB	57.9	CC	24.2	DD	33.8
176	0.24	28.3	7.9	AA	46.5	BB	74.4	CC	24.2	DD	33.8

NPR-HD/W4500,NQR/W5500, NRR/W5500 HD
Diesel Manual Transmission PTO Location, Drive Gear and Opening Information

MZZ Transmission PTO Opening

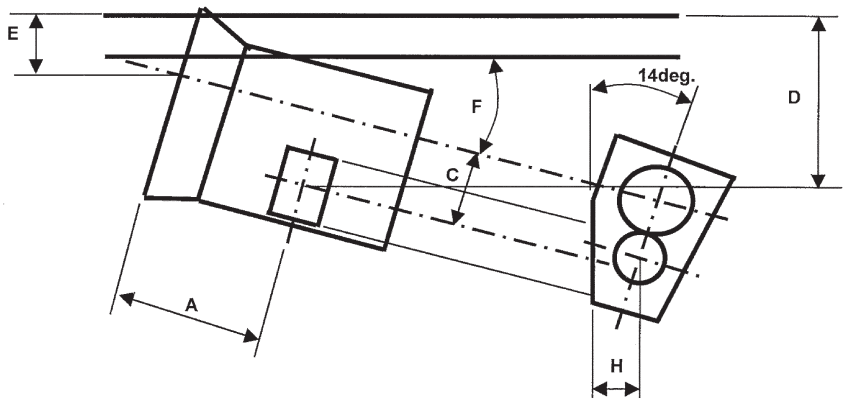


NPR-HD/W4500,NQR/W5500, NRR/W5500 HD

Diesel Manual Transmission PTO Location, Drive Gear and Opening Information

Trans.	Opening Location	Bolt Pattern	A	B	C	D	E	F	H	PTO Drive Gear Location	Ratio of PTO Drv. Gear Spd. to Eng. Spd.	No. of Teeth	Pitch	Helix Angle	Max. Output Torque
MZZ 6U	Left	(Dr 1)	11.6	37.57	5.2	12.8	7.7	2.5°	3.7	Countershaft	25/46=.543	37	3	25°	180 lbs.-ft@1,000 RPM

Manual Transmission



NPR-HD/W4500,NQR/W5500, NRR/W5500 HD
Diesel Manual Transmission Body Builder Weight Information Chart

NPR-HD/W4500

Body Builder Weight Information Chart

GVWR	AXLE	Wheelbase								UNSPRUNG WEIGHT
		109		132.5		150		176		
		in frame tank	side tank	in frame tank	side tank	in frame tank	side tank	in frame tank	side tank	
14500	FRONT	3792	4070	3893	4131	3975	4171	4044	4218	617
	REAR	2063	1832	2037	1847	1992	1858	1978	1872	1058
	TOTAL	5855	5902	5930	5978	5967	6029	6022	6090	1675

NQR/W5500

Body Builder Weight Information Chart

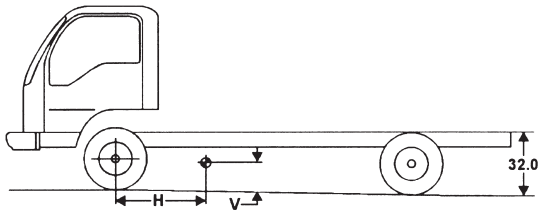
GVWR	AXLE	Wheelbase								UNSPRUNG WEIGHT
		109		132.5		150		176		
		in frame tank	side tank	in frame tank	side tank	in frame tank	side tank	in frame tank	side tank	
17950	FRONT	4024	4255	4151	4337	4246	4389	4331	4450	661
	REAR	2376	2093	2325	2087	2266	2086	2236	2086	1190
	TOTAL	6400	6348	6476	6424	6512	6475	6567	6536	1851

NRR/W5500-HD

Body Builder Weight Information Chart

GVWR	AXLE	Wheelbase								UNSPRUNG WEIGHT
		109		132.5		150		176		
		in frame tank	side tank	in frame tank	side tank	in frame tank	side tank	in frame tank	side tank	
19500	FRONT	4085	4319	4209	4398	4303	4447	4242	4507	661
	REAR	2378	2094	2329	2091	2272	2092	2442	2094	1190
	TOTAL	6463	6413	6538	6489	6575	6539	6684	6601	1851

NPR-HD/W4500,NQR/W5500, NRR/W5500 HD
Diesel Manual Transmission Center of Gravity



V = Vertical Center of Gravity
H = Horizontal Center of Gravity

The center of gravity of the completed vehicle with a full load should not exceed 63 inches above ground level for the 14,500 lb., 17,950 lb., and 19,500 lb. GVWR, and must be located horizontally between the centerlines of the front and rear axles.

NOTE: The maximum dimensions for a body installed on the NPR-HD/W4500, NQR/W5500, NRR/W5500 HD are 96 inches wide (outside) by 90 inches high (inside). Any larger body applications must be approved by ICTA Application Engineering. In the West Coast call 1-562-229-5314 and in the East Coast call 1-678-240-9818.

NPR-HD/W4500

GVWR	WB	V	H	
			IN FRAME TANK	SIDE TANK
14500	109	23.8	38.3	33.6
	132.5	23.7	45.3	40.6
	150	23.7	50.6	45.9
	176	23.6	58.4	53.7

NQR/W5500

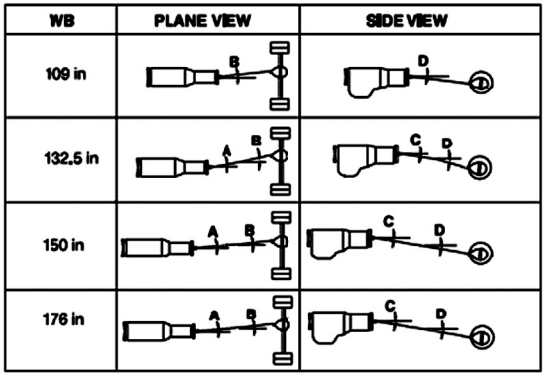
GVWR	WB	V	H	
			IN FRAME TANK	SIDE TANK
17950	109	25.0	40.4	35.8
	132.5	24.9	47.4	42.8
	150	24.9	52.7	48.1
	176	24.8	60.5	55.9

NRR/W5500-HD

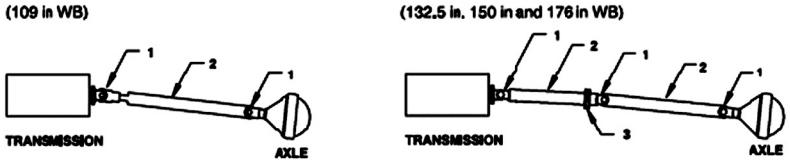
GVWR	WB	V	H	
			IN FRAME TANK	SIDE TANK
19,500	109	24.9	40.0	35.4
	132.5	24.9	47.1	42.5
	150	24.9	52.3	47.7
	176	24.9	64.9	55.5

NPR-HD/W4500,NQR/W5500, NRR/W5500 HD
Diesel Manual Transmission Propeller Shaft

WHEELBASE	Plane View		Side View	
	A	B	C	D
	MANUAL TRANS.	MANUAL TRANS.	MANUAL TRANS.	MANUAL TRANS.
109 in.	–	3.1°	–	8.1°
132.5 in.	0°	3.1°	2.5°	2.5°
150 in.	0°	3.1°	0°	5.3°
176 in.	0°	2.3°	0.3°	2.0°



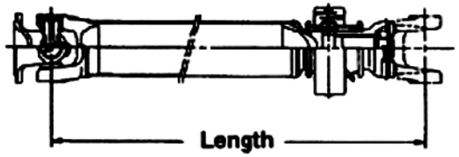
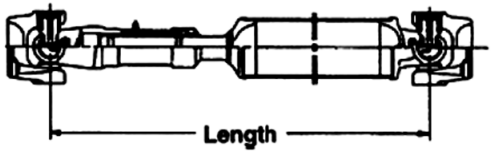
TYPICAL INSTALLATIONS SHOWING YOKES "IN PHASE." "IN PHASE" MEANS THAT THE YOKES AT EITHER END OF A GIVEN PROPELLER SHAFT ASSEMBLY ARE IN THE SAME PLANE.



1. UNIVERSAL JOINT
2. PROPELLER SHAFT
3. CENTER CARRIER BEARING

NPR-HD/W4500,NQR/W5500, NRR/W5500 HD
Diesel Manual Transmission Propeller Shaft

Trans. Type	MZZ 6 Manual Transmission			
WHEELBASE	109	132.5	150	176
No. of Shafts	1	2	2	2
Shaft #1 O.D.	3.54	3.54	3.54	3.54
Thickness	0.126	0.126	0.126	0.126
Length	39.9	27.0	44.4	53.8
Type	B	A	A	A
Shaft #2 O.D.	N/A	3.54	3.54	3.54
Thickness	N/A	0.126	0.126	0.126
Length	N/A	36.2	36.4	53.0
Type	N/A	B	B	B

Type	Description	Illustration
Type A	1st shaft in 2-piece driveline	
Type B	1st shaft in 1-piece driveline 2nd shaft in 2-piece driveline	

NPR-HD/W4500,NQR/W5500, NRR/W5500 HD

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